UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,882	10/12/2004	Chen-Hsiung Yang	TMIP0001USA	5881

27765 7590 01/19/2006

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
GUTIERREZ, KEVIN C	
ART UNIT	**PAPER NUMBER**
2851	

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EJC

Office Action Summary	Application No.	Applicant(s)	
	10/711,882	YANG, CHEN-HSIUNG	
	Examiner	Art Unit	
	Kevin Gutierrez	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Lu et al. (5,864,459).

Regarding claims 1 and 3, Lu et al. disclose "a transparent base (16; dielectric layer, which is made of glass (col. 3, line 65); and a conducting layer (10; electrode layer) positioned on a bottom surface of the transparent base (see fig. 2, where **10** is beneath **16**)"

Regarding claim 2, Lu et al. disclose "wherein the transparent base has dimensions similar to that of the wafer (col. 3, lines 48-49)."

3. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Elp et al. (US2004/0012767).

Regarding claims 1 and 3, Van Elp et al. disclose "a transparent base (230; core, which is made of glass ([0071], lines 4-7); and a conducting layer (216;

electrode) positioned on a bottom surface of the transparent base (see fig. 4, where **221** is beneath **230**)."

Regarding claim 2, Van Elp et al. disclose "wherein the transparent base has dimensions similar to that of the wafer (see fig. 4, where the chuck **10** is suitable to hold the wafer **W**)."

Regarding claim 7, Van Elp et al. disclose "wherein the wafer is attracted by an electrostatic chuck (200) via the conducting layer so that the wafer is transferred and undergoes at least a semi-conductor process ([0009], lines 4-6; [0068], lines 12-15)."

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Elp et al. in view of Suzuki et al. (US 2003/0029565).

Van Elp et al. disclose a transparent base, but does not disclose "wherein the transparent base is a quartz wafer."

However, having a quartz wafer as a transparent base is known to the art as it is evident by the teaching of Suzuki et al. ([0051], lines 2-3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to

modify the transparent base of Van Elp et al. by having the transparent base as a quartz wafer for at least the purpose of having a stronger base.

6. Claims 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Elp et al.

Regarding claim 8, Van Elp et al. discloses a semiconductor process ([0009], lines 4-9) and an alignment mark system ([0009], 20—21). Van Elp et al. does not disclose "wherein the semiconductor process is a double-sided process."

However, it would be obvious to one having ordinary skilled in the art that the invention of Van Elp. et al. is capable of performing a double-sided semiconductor process. Van Elp et al. teaches where the apparatus can repeatedly perform patterning procedures ([0009], lines 9-10 and 15-17). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the semiconductor process of Van Elp et al. by implementing a double-sided semiconductor process for at least the purpose of reducing cost production.

Regarding claim 10, Van Elp et al. further disclose "wherein the conducting layer is a non-transparent conducting layer ([0074], lines 8-9, where the electrodes are aluminum) having at least an exposed region corresponding to the alignment mark ([0009], lines 19-26).

Regarding claim 11, Van Elp et al. disclose a non-transparent conducting layer, but does not disclose "wherein the non-transparent conducting layer comprises a plurality of conducting patterns connected with each other."

However, it would be obvious to one ordinary skilled in the art to have a non-transparent conducting layer comprise of a plurality of connected conducting patterns. Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the non-transparent conducting layer of Van Elp et al. by having the non-transparent conducting layer comprise of connected patterns for at least the purpose of reducing the weight of the device.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Elp et al. in view of Bollen et al. (4,766,515).

Van Elp et al. disclose a conducting layer, but does not disclose "wherein the conducting layer is a transparent conducting layer."

However, having a transparent conducting layer is known to the art as it is evident by the teaching of Bollen et al. (col. 3, lines 13-15). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the conductor layers of Van Elp et al. by having them as transparent conducting layers for at least the purpose of reducing the weight composition of the chuck.

8. Claims 5, 6, 12-14, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Elp et al. in view of Strasbaugh et al. (US 2003/0134578).

Regarding claims 5, 6, 12 and 16, Van Elp et al. discloses all of the claimed

limitations except for a "bonding layer positioned on a top surface of the wafer carrier for bonding the wafer and the transparent base together" and "wherein the bonding layer is selected from the group consisting of double-sided tape, ultra violet tape, thermal sensitive tape, photo resist, and wax."

However, having a bonding layer of double-sided tape, ultra violet tape, thermal sensitive tape, photo resist, or wax which bonds the wafer and the transparent layer is known to the art as it is evident by the teaching of Strasbaugh et al. (claim 3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the chuck Van Elp et al. by including a tape bonding layer utilized in a manner described above for at least the purpose to promote a sturdy grasp of the chuck.

Regarding claim 12, Van Elp et al. as modified by Strasbaugh et al. disclosed all of the claimed limitations (see claims 1, 5, and 6 above).

Regarding claim 13, Van Elp et al. further disclose "wherein the transparent base has dimensions similar to that of the wafer (see fig. 4, where the chuck **10** is suitable to hold the wafer **W**)."

Regarding claim 14, Van Elp et al. further disclose "a transparent base (230; core, which is made of glass ([0071], lines 4-7); and a conducting layer (216; electrode) positioned on a bottom surface of the transparent base (see fig. 4, where **221** is beneath **230**)."

Regarding claims 17 and 18, Van Elp et al. discloses a semiconductor process

([0009], lines 4-9) and an alignment mark system ([0009], 20—21). Van Elp et al. does not disclose "wherein the semiconductor process is a double-sided process."

However, it would be obvious to one ordinary skilled in the art that the invention of Van Elp. et al. is capable to perform a double-sided semiconductor process. Van Elp et al. teaches where the apparatus can repeatedly perform patterning procedures ([0009], lines 9-10 and 15-17). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the semiconductor process of Van Elp et al. by implementing a double-sided semiconductor process for at least the purpose of reducing cost production.

Regarding claim 21, Van Elp et al. disclose a non-transparent conducting layer, but does not disclose "wherein the non-transparent conducting layer comprises a plurality of conducting patterns connected with each other."

However, it would be obvious to one ordinary skilled in the art to have a non-transparent conducting layer comprise of a plurality of connected conducting patterns. Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the non-transparent conducting layer of Van Elp et al. by having the non-transparent conducting layer comprise of connected patterns for at least the purpose of reducing the weight of the device.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Elp et al. in view of Strasbaugh, as applied to claims 5, 6, 12-14 and 16-18, and in further view of Suzuki et al.

Van Elp et al. as modified disclose a transparent base, but does not disclose "wherein the transparent base is a quartz wafer."

However, having a quartz wafer as a transparent base is known to the art as it is evident by the teaching of Suzuki et al. ([0051], lines 2-3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to further modify the transparent base of Van Elp et al. as modified by having the transparent base as a quartz wafer for at least the purpose of having a stronger base.

10. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Elp et al. in view of Strasbaugh, as applied to claims 5, 6, 12-14 and 16-18, and in further view of Bollen et al.

Regarding claim 19, Van Elp et al. as modified disclose a conducting layer, but does not disclose "wherein the conducting layer is a transparent conducting layer."

However, having a transparent conducting layer is known to the art as it is evident by the teaching of Bollen et al. (col. 3, lines 13-15). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to further modify the conductor layers of Van Elp et al. as modified by having them as transparent conducting layers for at least the purpose of reducing the weight composition of the chuck.

Regarding claim 20, Van Elp et al. further disclose "wherein the conducting layer is a non-transparent conducting later ([0074], lines 8-9, where the electrodes

are aluminum) having at least an exposed region corresponding to the alignment mark ([0009], lines 19-26).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following disclose a chuck with a transparent base and a conductive layer: Klebanoff (6,169,652), Matsunaga (6,166,897), Tamagawa et al. (5,777,838) and Kroon et al. (US 2003/0001107).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 7:30 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William Perkey
Primary Examiner

Kevin Gutierrez
Examiner
Art Unit 2851

January 13, 2006